

Message

From: Rusty Shaw [rusty.shaw@denbury.com]
Sent: 6/3/2022 10:27:27 PM
To: Brown, Christopher [Brown.Christopher.T@epa.gov]
CC: Cowin, Douglas K [dkcowin@burnsmcd.com]; Brandi Johnson [Brandi.Johnson@denbury.com]; Tom Jones [tom.jones@denbury.com]; Michael Alletag [michael.alletag@denbury.com]; Davis, Dale [didavis@burnsmcd.com]; Soutter, Douglas G [dgsoutter@burnsmcd.com]; Hesemann, John [jhesemann@burnsmcd.com]; Cheung, Wendy [Cheung.Wendy@epa.gov]
Subject: Re: [EXT] RE: Snowy River - BLM Sampling and Analysis Plan
Attachments: ATT00001.txt; ATT00002.txt

Sensitivity: Company Confidential

Chris,

We appreciate the review and feedback on the sample and analysis plan.

Thanks,

Rusty Shaw, REM
Environmental Compliance Manager
Denbury, Inc.
Office: 972-673-2777
Cell: 214-998-1830

On Jun 3, 2022, at 5:11 PM, Brown, Christopher <Brown.Christopher.T@epa.gov> wrote:

Thank you Doug,

I have reviewed the draft sampling and analysis plan as it relates to the proposed baseline groundwater sampling effort being submitted to BLM. Based on a limited review, I have a few comments and suggestions to offer informally, as a Class VI permit application for this project has not yet been submitted to EPA for review.

1. If low-flow groundwater sampling methodologies are employed for groundwater sample collection, the minimum purge volume prior to sample collection should be refined/increased in consideration of well depth. An EPA Region 1 guidance document (<https://www.epa.gov/sites/default/files/2017-10/documents/eqasop-gw4.pdf>) suggests that the final purge volume must be greater than the stabilized drawdown volume plus the pump's tubing volume. Since some of the water wells are relatively deep, the pump tubing volume could be significant, and the protocol in Standard Operating Procedure (SOP) #203 to collect samples after purging a minimum of three (3) consecutive, stabilized field parameter measurements taken every 5 minutes may not be adequate depending on sample tubing size and purge rate.
2. Suggest establishing stabilization criteria similar to that contained in SOP #203 as a goal, if attainable, and/or increased minimum purge time for water well sampling described in SOP #209. The SOP #209 procedure's current minimum purge time of five (5) minutes may be inadequate to purge stagnant water from the well prior to sample collection dependent on well depth, casing diameter, static water level, frequency of use, etc.

3. Suggested additional analytes for Table 5-1:

- Cations: Ammonia as N, Boron (B)
- Anions: Carbonate, Bicarbonate, Iodide (I)
- Metals (Total and Dissolved): proposed list + Lithium (Li) and additional constituents not included in Table 5-1 with numeric water quality standards in the Montana Department of Environmental Quality (MDEQ) Circular DEQ-7: Beryllium (Be), Mercury (Hg), Nickel (Ni), Silver (Ag), Strontium (Sr), Zinc (Zn).
- Dissolved gases: additional analytes beyond carbon dioxide based on knowledge of known or potential gas composition of injection fluid (e.g. Methane, Ethane, Propane, Butanes, Pentanes, Nitrogen, Hydrogen sulfide, Helium etc.)
- Organics: Benzene, Toluene, Ethylbenzene, Total Xylenes by EPA Method 8260 and Polycyclic Aromatic Hydrocarbons by EPA Method 8270 with Selected Ion Monitoring (SIM), or analyzed contingent upon detections of VPH, TEH, or EPH described in Table 5-1.
- Other: Specific Gravity

Let me know if you have any questions concerning these informal comments.

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Chris Brown, P.G.

Physical Scientist

U.S. EPA Region 8, UIC Section

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From: Cowin, Douglas K <dkcowin@burnsmcd.com>

Sent: Tuesday, May 24, 2022 10:24 PM

To: Cheung, Wendy <Cheung.Wendy@epa.gov>; Brown, Christopher <Brown.Christopher.T@epa.gov>

Cc: rusty.shaw@denbury.com; Brandi Johnson <Brandi.Johnson@denbury.com>; Tom Jones <tom.jones@denbury.com>; Michael Alletag <michael.alletag@denbury.com>; Davis, Dale <didavis@burnsmcd.com>; Soutter, Douglas G <dgsoutter@burnsmcd.com>; Hesemann, John <jhesemann@burnsmcd.com>

Subject: Snowy River - BLM Sampling and Analysis Plan

Sensitivity: Confidential

Wendy and Chris,

As promised, attached please find a draft of the sampling and analysis plan prepared for BLM for baseline monitoring of the Snowy River area of interest. We would appreciate any comments EPA may have on the scope of the proposed work. Let me know if you have any questions or would like to discuss further.

Thanks again,

Doug

Douglas K. Cowin, PG \ Burns & McDonnell
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